

MANIA K. BAGHDADI  
ANNE GOODWIN CRUMP  
VINCENT J. CURTIS, JR.  
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JAMES G. ENNIS  
RICHARD HILDRETH  
EDWARD W. HUMMERS, JR.  
FRANK R. JAZZO  
BARRY LAMBERGMAN  
PATRICIA A. MAHONEY  
GEORGE PETRUTSAS  
ROBERT D. PRIMOSCH  
LEONARD R. RAISH  
JAMES P. RILEY  
DAVID N. ROBERTS\*  
MARVIN ROSENBERG  
LONNA M. THOMPSON  
HOWARD M. WEISS  
\*ADMITTED IN TEXAS ONLY

FLETCHER, HEALD & HILDRETH

ATTORNEYS AT LAW

SUITE 400, 1225 CONNECTICUT AVENUE, N.W.

WASHINGTON, D.C. 20036-2679

P. O. BOX 33847

WASHINGTON, D.C. 20033-0847

(202) 828-5700

TELECOPIER NUMBER

(202) 828-5786

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FILE

PAUL D.P. SPEARMAN  
(1936-1982)  
FRANK ROBERSON  
(1936-1981)

RETIRED  
RUSSELL ROWELL  
EDWARD F. KENEHAN  
ROBERT L. HEALD  
FRANK U. FLETCHER

TELECOMMUNICATIONS CONSULTANT  
HON. ROBERT E. LEE

WRITER'S NUMBER  
(202) 828-

5780

July 17, 1992

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FEDERAL COMMUNICATIONS COMMISSION  
OFFICE OF THE SECRETARY


Ms. Donna R. Searcy  
Secretary  
Federal Communications Commission  
1919 M Street, N.W.  
Room 222  
Washington, D.C. 20554

RE: RM-8004

Dear Ms. Searcy:

Transmitted herewith on behalf of Digital Microwave Corporation are an original and nine copies of its Reply Comments on the above-referenced Petition for Rule Making filed by Alcatel Network Systems, Inc.

Respectfully submitted,

  
Leonard R. Raish  
Counsel for Digital  
Microwave Corporation

BL/es  
Enclosure

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BEFORE THE

**Federal Communications Commission**

WASHINGTON, D.C. 20554

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**JUL 17 1992**

In the Matter of )  
 )  
Amendment of Parts 2, 21, 25 and 94 )  
of the Commission's Rules to )  
Accommodate Common Carrier )  
and Private Op-Fixed Microwave )  
Systems in Bands Above 3 GHz )

RM - 8004

FEDERAL COMMUNICATIONS COMMISSION  
OFFICE OF THE SECRETARY

To: The Commission

**REPLY COMMENTS OF DIGITAL MICROWAVE CORPORATION**

Digital Microwave Corporation ("DMC"), by its attorneys, hereby replies to the comments submitted in response to the above-captioned Petition for Rule Making filed by Alcatel Network Systems, Inc.

DMC designs, manufactures and markets advanced, high performance digital microwave radio equipment primarily for use in the 2, 8, 10, 18 and 23 GHz bands. DMC's products have the capacity to transmit and receive multiple T1 and T2 and single T3 digital lines carrying voice, data and video signals over distances of up to 40 miles.

As a general matter, DMC supports the proposals advanced by Alcatel. At this time, DMC responds only to one issue raised in the Petition and addressed by at least one commenter, viz, proposed minimum system loading requirements for digital microwave systems. See Alcatel Petition at Appendix, pp. 54-58.

While DMC does not object to increasing spectral efficiency requirements, it disagrees that payload capacity requirements for

channels of 1.6 MHz and below should be increased. Microwave radio equipment of a given architecture has a cost that is relatively independent of payload. In other words, a 64 QAM radio with a payload of 45 Mb/s costs about the same as an identical radio with a payload of 6.3 Mb/s. The decision to use microwave radio is often made by comparing the cost of a microwave solution to the cost of alternative modes of transmission such as leased lines. Therefore, as payload is reduced, the cost of microwave radio must also be reduced if it is to be favorably compared.

Alcatel advocates a minimum payload that requires a bandwidth efficiency of about 4 bits per second per Hertz ("b/s/Hz") for the narrowest channels. (One of the comments proposed that this requirement be only 2.5 b/s/Hz during the first two years of implementation.) To meet a 4 b/s/Hz requirement, a radio employing 64 QAM modulation would be required, which is an expensive radio. The likely result would be that microwave would compare unfavorably from a cost standpoint with other communications alternatives. Consequently, there would be little use of lower bandwidth channels, thereby wasting scarce spectrum.

Accordingly, DMC suggests that the loading requirements for channels of 1.6 MHz and below remain unchanged from the present requirement of 1 b/s/Hz. This will allow the use of relatively inexpensive radios employing simpler modulation types and will result in greater utilization of the narrowest bandwidth

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channels. Apart from this suggested modification, DMC supports the proposed minimum payload requirements for channels of 3.2 MHz and above.

Respectfully submitted,

DIGITAL MICROWAVE CORPORATION

By: Leonard Robert Raish  
Leonard Robert Raish

Its Attorney

FLETCHER, HEALD & HILDRETH  
1225 Connecticut Avenue, N.W.  
Suite 400  
Washington, D.C. 20036  
(202) 828-5700

July 17, 1992

CERTIFICATE OF SERVICE

I, Elizabeth Stout, a secretary in the law firm of Fletcher, Heald & Hildreth, do hereby certify that a true copy of the foregoing Reply Comments were mailed this 17th day of July, 1992, by first-class United States mail, postage prepaid, to the following:

Robert J. Miller  
Gardere & Wynne, L.L.P.  
1601 Elm Street, Suite 3000  
Dallas, Texas 75201  
Counsel for Alcatel Network Systems, Inc.

  
\_\_\_\_\_  
Elizabeth Stout